



## TDMTC: Microprocessor Based, Linearised & Isolated Slimline DIN Rail Voltage/Current Output Thermocouple Transmitter

- High precision
- Ultra-Compact size (6.2mm thick!)
- 1500V AC Output Isolation
- “Hot Swappable” when used with optional bus adaptor
- Configuration by dip switches on unit
- Choice of 0-5V DC, 1-5V DC, 0-10V DC, 4~20mA, 0-20mA, 20~4mA or 20~0mA outputs



The TDMTC transmitter converts a temperature signal read by Thermocouple (types J, K, R, S, T, B, E & N) Sensors into a signal normalised in voltage/current (2 wire technology).

<p><b>Technical Features – Input (see page 2 for input &amp; range table)</b></p> <p>Thermocouple Types : J, K, R, S, T, B, E &amp; N (as per EN60584.1)</p> <p>Measurement Range : Settable via dip switch (see input &amp; range table)</p> <p>Minimum Span : 100°C</p> <p>Impedance : 10MΩ</p> <p>Test Current : &lt;50 nA</p> <p>CMRR<sup>(1)</sup> : &gt;135 dB (refers to power supply side)</p> <p>DMRR<sup>(1)(2)</sup> : &gt;40 dB</p>	<p><b>Technical Features – Output/Power Supply</b></p> <p>Operating Voltage : 19.2 - 30V DC</p> <p>Consumption : Max. 24mA at 24V DC</p> <p>Current output : 4~20mA, 0-20mA, 20~4mA or 20~0mA. Max. Load resistance 500Ω</p> <p>Voltage output : 0-5V DC, 1-5V DC &amp; 0-10V DC. Min. load resistance 2kΩ</p> <p>Maximum Voltage : Approx. 12.5V</p> <p>Maximum Current : Approx. 25mA</p> <p>Resolution : 1mV for voltage output, 2µA for current</p> <p>Error: mA &amp; 0-5V DC outputs: 350ppm of end of scale 0-10V DC output: 200ppm of end of scale</p>
<p><b>Other Features</b></p> <p>ADC : 14 bits</p> <p>Class/Base Precision : 0.1%</p> <p>Thermal Drift : 120ppm/K</p> <p>Response Time (10-90%) : &lt;25ms (without filter) &lt;55ms (with repeat filter 50Hz)</p> <p>Cold Junction Error : 1.5°C Max.</p> <p>Protection Index : IP20</p> <p>Sensor Fault Detection : Yes</p> <p>Box : PBT (black colour)</p> <p>Dimensions/Weight : 6.2 x 93.1 x 102.5mm / 46g</p> <p>Mounting : Standard 35mm DIN rail</p>	<p><b>Other Features (contd.)</b></p> <p>Operating Conditions : Temperature -20 / +65 °C Humidity 10 - 90% at 40°C (non-condensing) Altitude: up to 2000 m.a.s.l</p> <p>Storage Temperature : -40 - +85 °C</p> <p>Connections : Spring terminals</p> <p>Conductor Section : 0.2..2.5 mm<sup>2</sup></p> <p>Wire stripping : 8 mm</p> <p>Isolation Voltage : 1.5 kV (50 Hz for 1 Min.)</p>

Standards: EN61000-6-4/2002 (electromagnetic emission, industrial surroundings)  
EN61000-6-2/2005 (electromagnetic immunity, industrial surroundings)  
EN61010-1/2001 (safety)

<sup>(1)</sup>The values are valid at the set rejection frequency with filter ON  
<sup>(2)</sup>For disturbance values such as the input signal peak does not exceed the limit of acceptability

Continued....

## Input & Range Table

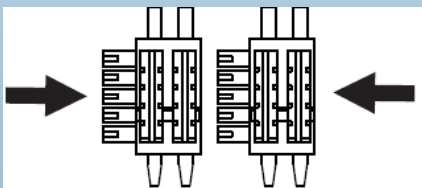
	Input	Range (°C)	Mean Error	Minimum Span (°C)	Resolution (°C)	Standard
Thermocouple	J	-210...1200	0.025% + 0.29°C	100	0.12	IEC 60584
	K	-200...1372	0.025% + 0.4°C	100	0.17	IEC 60584
	R	-50...1768	0.025% + 1.19°C	100	0.59	IEC 60584
	S	-50...1768	0.025% + 1.34°C	100	0.66	IEC 60584
	T	-200...400	0.025% + 0.31°C	100	0.13	IEC 60584
	B	250(*)...1820	0.025% + 1.87°C	100	0.90	IEC 60584
	E	-200...1000	0.025% + 0.2°C	100	0.92	IEC 60584
	N	-200...1300	0.025% + 0.42°C	100	0.19	IEC 60584

\*Up to 250°C the output is considered equivalent to a null temperature

## Output Signal Limits

Nominal Value	Over-range +/- 2.5%	Over-range +/- 5%
20 mA	20.5mA	21mA
4 mA	3.5mA	3mA
0 mA	0mA	0mA
10V DC	10.25V DC	10.5V DC
5V DC	5.125V DC	5.25V DC
1V DC	0.875V DC	0.75V DC
0V DC	0V DC	0V DC

## Accessories: BUS Connector



- Connects 2 modules per connector
- Allows modules to be "hot swappable"
- Connect multiple units to a single power supply